

WHAT IS CLAIMED IS:

1 1. In a fixed wireless access (FWA) communication system
2 having at least a first fixed-site base station and at least a
3 first fixed-site subscriber station capable of communicating with
4 the first fixed-site base station, an improvement of apparatus for
5 facilitating radio communication with a mobile station, said
6 apparatus comprising:

7 a first local-network radio transceiver positioned at the
8 at least the first fixed-site subscriber station said first local-
9 network radio transceiver for selectably transceiving communication
10 signals with the mobile station upon a first local radio link
11 formed between the first local-network radio transceiver and the
12 mobile station when the mobile station is positioned within a
13 selected range of the first fixed-site subscriber station.

2. The apparatus of Claim 1 wherein the fixed-site subscriber station includes a large-area-network transceiver positioned thereat for transceiving communication signals upon a large-area radio link with the fixed-site base station and wherein said first local-network radio transceiver is coupled to the large-area-network transceiver such that communication signals generated at the fixed-site base station, communicated upon the large-area radio link and received at the large-area-network transceiver, are routed to said first local-area-network transceiver to be communicated to the mobile station upon the local radio link.

3. The apparatus of Claim 2 wherein communication signals generated at the mobile station and communicated upon the local radio link to said first local-network transceiver are routed to the large-area-network transceiver to be communicated upon the large-area radio link to the fixed-sited base station.

4. The apparatus of Claim 2 wherein the large-area-network transceiver comprises a rack assembly having at least one expansion slot at which card-mounted circuitry is connectable, thereafter to form a portion of the rack assembly and wherein said first local-network transceiver comprises a local area network card connectable to the expansion slot.

1 5. The apparatus of Claim 1 wherein the at least the first
2 fixed-site subscriber station comprises the first fixed-site
3 subscriber station and at least a second fixed-site subscriber
4 station, and wherein said apparatus further comprises:

5 a second local-network transceiver positioned at the
6 second fixed-site subscriber station, said second local-network
7 radio transceiver for selectably transceiving communication signals
8 with the mobile station upon a second local radio link formed
between the second local-network radio transceiver and the mobile
station when the mobile station is positioned within a selected
range of the second fixed-site subscriber station.

1 6. The apparatus of Claim 5 wherein said first local-network
transceiver defines a first cellular area within which the mobile
station is capable of transceiving the communication signals with
said first local-network transceiver and wherein said second local-
5 network transceiver defines a second cellular area within which the
6 mobile station is capable of transceiving the communication signals
7 with said second local-network transceiver.

1 7. The apparatus of Claim 6 wherein the first cellular area
2 defined by said first local-network transceiver and the second
3 cellular area defined by said second local-network transceiver at
4 least partially overlap and wherein selection is made of with which
5 one of said first and second local-network transceivers,
6 respectively, that the mobile station communicates responsive to
7 determination of at least one communication parameter.

8. The apparatus of Claim 7 wherein the at least one
communication parameter responsive to which selection is made of
with which one of said first and second local-network transceiver
that the mobile station communicates comprises a signal quality
parameter.

9. The apparatus of Claim 7 wherein the at least one
communication parameter responsive to which selection is made of
with which one of said first and second local-network transceivers
that the mobile station communicates comprises a system load-
related parameter.

1 10. The apparatus of Claim 6 wherein the mobile station is
2 permitted movement at least between the first cellular area and the
3 second cellular area and wherein communication hand-offs are
4 performed between said first local-network transceiver and said
5 second local-network transceiver responsive to movement of the
6 mobile station between the first cellular area and the second
7 cellular area defined by said first local-network transceiver and
8 said second local-network transceiver, respectively.

11. In the fixed wireless access system of claim 10, a
further improvement of a routing map coupled to the at least the
first fixed-site base station, said routing map containing an
indication of in which of the first cellular area and the second
cellular area that the mobile station is positioned.

12. In the fixed wireless access system of Claim 11 wherein
the at least the first fixed-site base station is connected to an
access processor and wherein said routing map is located at the
access processor.

13. The routing map of Claim 12 wherein the indication of in
which cellular area that the mobile station is located is updated
responsive to changes in location of the mobile station.

1 14. The routing map of Claim 12 wherein routing of
2 communication signals to the mobile station is selected responsive
3 to values of the indication contained thereat.

1 15. The routing map of Claim 14 wherein, subsequent to
2 updating of the values of the indication contained thereat, and
3 responsive to hand-off of communications between said first local-
4 network radio transceiver and said second local-network radio
transceiver, undelivered communication signals are rerouted
according to updated values of the indication.

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1 16. In a method for communicating in a fixed wireless access
2 (FWA) communication system having at least a first fixed-site base
3 station and at least a first fixed-site subscriber station capable
4 of communicating with the first fixed-site base station, an
5 improvement of a method for facilitating radio communications with
6 a mobile station, said method comprising:

7 positioning a first local-network radio transceiver at
8 the at least the first fixed-site subscriber station; and

selectably transceiving communication signals with the
mobile station when a first local radio link formed between the
first local-network radio transceiver and the mobile station when
the mobile station is positioned within a selected range of the
first fixed-site subscriber station.

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1 17. The method of Claim 16 wherein the first fixed-site
2 subscriber station includes a large-area-network transceiver
3 positioned thereat for transceiving communication signals upon a
4 large-area radio link with the fixed-site base station and wherein
5 said operation of positioning comprises coupling the first local-
6 network radio transceiver to the large-area-network transceiver
7 such that communication signals generated at the fixed-site base
8 station, communicated upon the large-area radio link and received
at the large-area-network transceiver, are routed to the first
local-area-network transceiver to be communicated to the mobile
station upon the local radio link.

18. The method of Claim 16 wherein the at least the fixed-
site subscriber station comprises the first fixed-site subscriber
station and at least a second fixed-site subscriber station, said
4 method further comprising the operation of positioning a second
5 local-network radio transceiver at the second fixed-site subscriber
6 station..

1 19. The method of Claim 18 wherein the mobile station moves
2 between coverage areas defined by the first local-network radio
3 transceiver and by the second local-network radio transceiver, said
4 method further comprising the operation of handing-off
5 communications with the mobile station between the first local-
6 network radio transceiver and the second local-network radio
7 transceiver when the mobile station moves between the coverage
8 areas.

20. The method of Claim 19 comprising the additional
operation of maintaining a routing map indicting a routing map
indicating in which coverage area the mobile station is positioned.

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